

METHOD AND APPARATUS FOR MARKING AND IDENTIFYING LIQUIDS

Abstract

A liquid can be marked for identification purposes with at least first and second
5 miscible markers. The markers are mixed in the liquid so that the ratio of the
concentration of the first marker to the concentration of the second marker is
substantially equal to a predetermined value. Thus, by comparing the ratio of the
measured concentration of the first marker to the measured concentration of the second
marker with predetermined values the liquid can be uniquely identified. ~~In one-~~
10 ~~embodiment, a multi-channel infrared fuel analyzer (10) is disclosed for identifying fuel~~
~~samples in an examination vessel or flow tube (12). Radiation source (16) is provided~~
~~on one side of tube (12) for illuminating the flowing fuel (14). Detectors (20A, 20B, and~~
~~20C) assigned to specific channels, are provided on the other side of the tube for~~
~~detecting absorption associated with the presence of an assigned fuel marker. The~~
15 ~~infrared light source and detectors can be connected to a processor and control unit (22)~~
for initiation of testing, for processing of detection signal from the detectors, and for
display of readout information. Processor and control unit (22) can include a look up
table (23) for storing information about marking patterns, a comparison element (35) for
comparing measured values with values supplied by look up table (23), and a display
20 (30).

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45. (new) A system for assisting in the identification of a marked liquid, comprising;
a plurality of silent markers miscible with a liquid to be identified; and

a detector for detecting the plurality of silent markers and for generating signals
indicative of relative concentrations of each of the silent markers; and

a data processor connected to the detector comprising:

a receiver to receive the signals from the detector and determine therefrom a
measured concentration ratio of the markers;

a look-up table storing a plurality of known concentration ratios, each
concentration ratio corresponding to the signal from a specific combination of the
plurality of silent markers at predefined relative concentrations; and

a ratio comparison element capable of comparing the measured concentration
ratio with known concentration ratios of identified liquids, the known ratios being
accessible, via the look up table, to the ratio comparison element, so as to permit the
identification of the marked liquid .

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